

THE MATRIX

<http://www.uacte.org/matrix>

Not quite what you think it is! This exciting new document prepared by several distance learning experts here in Utah (USU, USOE, Board of Regents, UVSC, & Bridgerland ATC) is an instructional design matrix for all forms of distance learning. Very helpful for those who are looking for the best way to use a particular technology of teaching strategy. If I want to teach a concept about evolution, for example, would a group discussion, worksheet, quiz, asynchronous reading or lecture be the best way to do it in an online or videoconferencing environment? What should I look for? What considerations should I look for in preparing my distance learning lesson?

This document can also be found at:

<http://www.usoe.k12.ut.us/curr/ednet/training/materials/preparing.html> The Distance Education Training Site at the Utah State Office of Education. However, it has been reproduced and added to below!

Technology Delivered Matrix

This matrix illustrates how a number of teaching activities can be accomplished within various technology delivery formats. Information here is based on several broad premises for technology delivered instruction. The purpose of the matrix is to show the numerous options found within technology delivered instruction.

<u>Synchronous/Real Time Place Bound Instruction</u>	<u>Synchronous or Asynchronous</u>	<u>Asynchronous/Time Delayed Instruction</u>
<u>T1</u> <u>IP Video</u> <u>Satellite</u>	<u>Internet</u>	<u>Broadcast Television</u> <u>Video Home Viewing</u> <u>Media Streaming</u> <u>Print (Independent Study)</u>



Debate/local and remote participants		View FeedbackAsk a Question
T1	Facilitator will switch cameras among the origination and receive sites to show debate teams in different locations. Teams must switch microphones off when not speaking.	
IP Video	The IP Video units "switch" cameras and microphones to the person or persons speaking. Facilitator coordination may not be needed.	
Satellite	With satellite, the receive sites see the origination sites only, and audio is two-way. Debate will be audio only. Visual cues will not be evident to teams.	
Internet	Online debate might be accomplished in a chat room, in a text only format, or with web cameras or conferencing software with the capacity to stream video and switch locations. Cameras or conferencing software would be an additional cost to instruction.	
Broadcast Television	Debate is prerecorded. Enrolled students are observers, not participants.	
Video Home Viewing	Debate is prerecorded. Enrolled students are observers, not participants.	
Media Streaming	Debate is prerecorded. Enrolled students are observers, not participants.	
Print (Independent Study)	IS students generally study in isolation from other students; the delay in transmitting materials from students to instructor and back makes debate via Independent Study unlikely.	

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Exam		View FeedbackAsk a Question
T1	Facilitators, at the direction of the instructor, proctor exams. Facilitators may grade exams, at the direction of the instructor, or convey exams to the instructor. The instructor should plan enough lead time to get tests, either physically or electronically, from the instructor to the receive sites.	
IP Video	Facilitators, at the direction of the instructor, proctor exams. Facilitators may grade exams, at the direction of the instructor, or convey exams to the instructor. The instructor should plan enough lead time to get tests, either physically or electronically, from the instructor to the receive sites.	
Satellite	Facilitators, at the direction of the instructor, proctor exams. Facilitators may grade exams, at the direction of the instructor, or convey exams to the instructor. The instructor should plan enough lead time to get tests, either physically or electronically, from the instructor to the receive sites.	
Internet	Online testing can be simple or complex. Simple: faculty can post exams online. They must assume that students log in and take their exams, on a honor system, following the instructors instructions (ex. open book vs. closed book), not unlike a take-home exam. Online exams can be timed. Immediate feedback often possible. There are many more elegant, more complex testing solutions such as using a database pool of questions to dynamically generate a different subset of items for each student. Test banks may require significant initial effort (although	

	many publishers make test banks available with texts) but reduce the effort needed to give exams over time.
Broadcast Television	The instructor will arrange proctor(s) or may students identify an acceptable proctor. Student may have to travel to take exam. Standards of best practice suggest travel should not exceed 30 minutes. Acceptable proctors include university or college testing centers, public school superintendents or principals, and public library reference librarians; relatives, friends, and work supervisors are unacceptable.
Video Home Viewing	The instructor will arrange proctor(s) or may students identify an acceptable proctor. Student may have to travel to take exam. Standards of best practice suggest travel should not exceed 30 minutes. Acceptable proctors include university or college testing centers, public school superintendents or principals, and public library reference librarians; relatives, friends, and work supervisors are unacceptable.
Media Streaming	Streamed exams require a web-knowledgeable proctor. Requires specific software/hardware on both ends, exams delayed in return depending on when students takes exam. MEDIOCRE ANSWER
Print (Independent Study)	The instructor will arrange proctor(s) or may students identify an acceptable proctor. Student may have to travel to take exam. Standards of best practice suggest travel should not exceed 30 minutes. Acceptable proctors include university or college testing centers, public school superintendents or principals, and public library reference librarians; relatives, friends, and work supervisors are unacceptable.

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Field Trip		View FeedbackAsk a Question
T1	Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.	
IP Video	Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.	
Satellite	Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.	

	and adult supervision.
Internet	Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.
Broadcast Television	Students may be directed to view select television broadcasts. Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.
Video Home Viewing	Students may be directed to view select television broadcasts. Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.
Media Streaming	The instructor may select "streamed" broadcast field trips. Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.
Print (Independent Study)	Setting a field trip to a single location may depend on where students in the class are located. Field trips can be designed to instruct students to take an individual or small group field trip in their locale (ex. attend a performing arts event, a library, or museum, including events online). Internet resource enable the student to "visit" almost an infinite number of "sites" to see what is there. The instructor may "visit the site first" to determine its strengths and appropriateness. Field trips involving travel involving minors require insurance coverage, parental permission, and adult supervision.

Guest lecturer/local		View Feedback Ask a Question
T1	The instructor or facilitator may provide the guest lecturer some basic instruction on the EDNET system. The facilitator should prepare to "follow" lecturer with the camera.	
IP Video	Requires a local technician with ability to "follow" lecturer, may require some technical training.	
Satellite	Requires a local technician with ability to "follow" lecturer, may require some technical training.	
Internet		
Broadcast Television	Programs are pre-taped with guests included in taping.	
Video Home Viewing	Programs are pre-taped with guests included in taping.	
Media Streaming	Requires a local technician with ability to "follow" lecturer, may require some technical training.	
Print (Independent Study)		


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Guest lecturer/remote		View Feedback Ask a Question
T1	Requires facilitator to switch between presentation/lecturer. Requires facilitator to be the technician-difficult if not trained.	
IP Video	Requires facilitator to switch between presentation/lecturer. Requires facilitator to be the technician-difficult if not trained.	
Satellite	With satellite, the receive sites see the origination sites only, and audio is two-way. Students in receive sites will hear the lecturer.	
Internet	Lectures can be pre-taped, then streamed.	
Broadcast Television	Lecturers can be pre-taped, then broadcast.	
Video Home Viewing	Lecturers can be pre-taped, then broadcast.	
Media Streaming	Lectures can be pre-taped, then streamed.	
Print (Independent Study)	Lectures can be pre-taped, then transcribed or dubbed to video and mailed.	


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Hands on experience (eg, mini lab)		View Feedback Ask a Question
T1	Requires facilitator assistance as well as topic knowledge on part of facilitator. Not all schools have materials needed nor equipment required.	
IP Video	Requires facilitator assistance as well as topic knowledge on part of facilitator. Not all schools have materials needed nor equipment required.	
Satellite	Instructor unable to view students participating in project. Students would be unable to do a presentation on what learned. Written report only real option.	
Internet		
Broadcast Television	No guarantee of viewer/student's ability to obtain materials, equipment needed. unless originating org. willing to provide materials/equipment	
Video Home Viewing	No guarantee of viewer/student's ability to obtain materials, equipment needed. unless originating org. willing to provide materials/equipment	
Media Streaming	Requires facilitator assistance as well as topic knowledge on part of facilitator. Not all schools have materials needed nor equipment required.	
Print (Independent Study)		


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ITV feed		View Feedback Ask a Question
T1	Utilizing broadcast television into the T1 video classroom is technically possible. Check on copyright. Timing of video feed in teacher's room must match.	
IP Video	Utilizing broadcast television into the IP video classroom is technically possible. Check on copyright. Timing of video feed in teacher's room must match.	
Satellite	Utilizing broadcast television into the Sat video classroom is technically possible. Check on copyright. Timing of video feed in teacher's room must match.	
Internet	ITV feed into the Internet can be done as videostreaming. Requires significant technical expertise, usually only available at the TOC. Storage of video on computer server is necessary.	
Broadcast Television	n/a	
Video Home Viewing	n/a	
Media Streaming	ITV feed into the Internet can be done as videostreaming. Requires significant technical expertise, usually only	

	available at the TOC. Storage of video on computer server is necessary.
Print (Independent Study)	Some video programs are available as printed text (a transcript) or as close captioned (used by the deaf community). May be difficult to obtain.

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Lecture		View FeedbackAsk a Question
T1	Teacher delivered "lecture" is readily done. Teacher must use good audience participation to avoid the "talking head syndrome."	
IP Video	Teacher delivered "lecture" is readily done. Teacher must use good audience participation to avoid the "talking head syndrome."	
Satellite	Teacher delivered "lecture" is readily done. Teacher must use good audience participation to avoid the "talking head syndrome."	
Internet	video feed of teacher lecture can into the Internet can be done as videostreaming. Requires significant technical expertise, usually only available at the TOC. Storage of video on computer server is necessary.	
Broadcast Television	Teacher delivered "lecture" is readily done. Teacher must use good audience participation to avoid the "talking head syndrome." Broadcast quality presentation and set design are required. Use of teleprompter may be needed. Significant cost due to overhead.	
Video Home Viewing	Teacher delivered "lecture" is readily done. Teacher must use good audience participation to avoid the "talking head syndrome." Broadcast quality presentation and set design are required. Use of teleprompter may be needed. Significant cost due to overhead.	
Media Streaming	Teacher delivered "lecture" is readily done. Teacher must use good audience participation to avoid the "talking head syndrome." Broadcast quality presentation and set design are required. Use of teleprompter may be needed. Significant cost due to overhead.	
Print (Independent Study)	Lecture notes, script, handouts can easily be duplicated and distributed/posted for student use at a convenient time. Ease of use= 1	

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Make up exam/a few students		View Feedback Ask a Question
T1	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	
IP Video	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	
Satellite	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	
Internet	Posting of tests on the internet allowing for a predetermined testing time--(24-72 hrs) is easily done. Tests can now be computer graded and scores available immediately.	
Broadcast Television	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	
Video Home Viewing	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	
Media Streaming	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	
Print (Independent Study)	Requiring student to come into class at a later time to take an exam requires a proctor/teacher and room access.	


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Office hours/local students		View Feedback Ask a Question
T1		
IP Video		
Satellite		
Internet		
Broadcast Television		
Video Home Viewing		
Media Streaming		
Print (Independent Study)		


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Office hours/remote students		View Feedback Ask a Question
T1	Students unable to drive to campus must depend on phone, fax, or e-mail. Students often unavailable during instructor office hours. Instructors not always prompt in responding to e-mail.	
IP Video	Students unable to drive to campus must depend on phone, fax, or e-mail. Students often unavailable during instructor office hours. Instructors not always prompt in responding to e-mail.	
Satellite	Students unable to drive to campus must depend on phone, fax, or e-mail. Students often unavailable during instructor office hours. Instructors not always prompt in responding to e-mail.	
Internet		
Broadcast Television	Students unable to drive to campus must depend on phone, fax, or e-mail. Students often unavailable during instructor office hours. Instructors not always prompt in responding to e-mail.	
Video Home Viewing	Students unable to drive to campus must depend on phone, fax, or e-mail. Students often unavailable during instructor office hours. Instructors not always prompt in responding to e-mail.	
Media Streaming	Students unable to drive to campus must depend on phone, fax, or e-mail. Students often unavailable during instructor office hours. Instructors not always prompt in responding to e-mail.	
Print (Independent Study)		


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Pop quiz		View Feedback Ask a Question
T1	The use of the "pop quiz" during a videoconference teleclass has been successfully used. It usually requires an overhead "ELMO" camera on which to write or place prepared questions. Grading of the "pop quiz" can be problematic, because the teacher cannot "see" the students and must rely upon the local site facilitator to monitor and even assist in grading the quiz. It has been helpful to send an "answer key" to the local facilitators by fax or email before class so they know what is going to happen in the upcoming class and can assist the teacher with proper proctoring, grading, recording, and administration of the pop quiz. Communicating the information (Scores) back to the students should be done "off air." Student scores should not be read over the air (due to privacy-FIRPA) regulations. Facilitators can often fax or email the student scores back to the instructor during the same class period before class is over....or grading can be left off and become more formative, as part of an overall teaching strategy. If you haven't seen the EDNET Answer Cards—find one and see how it works.--George	
IP Video		
Satellite		
Internet		

Broadcast Television	
Video Home Viewing	
Media Streaming	
Print (Independent Study)	

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PowerPoint presentation		View FeedbackAsk a Question
T1	Much like a lecture, the Powerpoint lesson can be done as a live interactive event to supplement the video information being presented. Text is usually much clearer and easier to read and allows better student interaction if done properly. It is easy, however, for teachers to succumb to "Death by Powerpoint," and overuse this handy tool to powerpointlessness! Student handouts of the pages can be prepared and distributed ahead of time and can be very helpful. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
IP Video	Much like a lecture, the Powerpoint lesson can be done as a live interactive event to supplement the video information being presented. Text is usually much clearer and easier to read and allows better student interaction if done properly. It is easy, however, for teachers to succumb to "Death by Powerpoint," and overuse this handy tool to powerpointlessness! Student handouts of the pages can be prepared and distributed ahead of time and can be very helpful. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
Satellite	Much like a lecture, the Powerpoint lesson can be done as a live interactive event to supplement the video information being presented. Text is usually much clearer and easier to read and allows better student interaction if done properly. It is easy, however, for teachers to succumb to "Death by Powerpoint," and overuse this handy tool to powerpointlessness! Student handouts of the pages can be prepared and distributed ahead of time and can be very helpful. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
Internet	HTML Powerpoints are becoming increasingly popular and allow for students to progress through a lesson at their own speed and timing. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
Broadcast Television	Powerpoint is rarely used in Broadcast television. The use of upper and lower qtr shots to add a name, phone number, or other vital information is sparingly used.	
Video Home		

Viewing	
Media Streaming	Much like a lecture, the Powerpoint lesson can be done as a live interactive event to supplement the video information being presented. Text is usually much clearer and easier to read and allows better student interaction if done properly. It is easy, however, for teachers to succumb to "Death by Powerpoint," and overuse this handy tool to powerpointlessness! Student handouts of the pages can be prepared and distributed ahead of time and can be very helpful. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.
Print (Independent Study)	


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Problem Solving on white board		View FeedbackAsk a Question
T1	Instructor handwriting sometimes difficult to read. Off site - facilitator must switch between elmo and students so instructor can see problem. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
IP Video	Instructor handwriting sometimes difficult to read. Off site - facilitator must switch between elmo and students so instructor can see problem. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
Satellite	Instructor handwriting sometimes difficult to read. Level of ease: 1. However, off site - unable to problem solve using whiteboard as instructor does not have return video. Text display should carefully follow established guidelines (4x 6), Six lines per page, 6 words per line, 36 point high contrast sans serif fonts, etc.	
Internet		
Broadcast Television	White board writing generally unprofessional looking for television. Is easy to do but not neat and clean for broadcast. Viewing audience unable to ask for problem solving using this technology.	
Video Home Viewing	Viewing audience unable to ask for problem solving using this technology.	
Media Streaming	Viewing audience unable to ask for problem solving using this technology.	
Print (Independent Study)		


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Public reading		View Feedback Ask a Question
T1		
IP Video		
Satellite		
Internet		
Broadcast Television		
Video Home Viewing		
Media Streaming		
Print (Independent Study)		


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Slide show		View Feedback Ask a Question
T1	Should not be a problem unless audio/video sync is off.	
IP Video	Should not be a problem unless audio/video sync is off.	
Satellite	Should not be a problem unless audio/video sync is off. Available for origination site. NA for satellite site.	
Internet		
Broadcast Television	Would be done during pre-production, production, post production. Not possible once episode is in the can.	
Video Home Viewing	Would be done during pre-production, production, post production. Not possible once episode is in the can.	
Media Streaming	Should not be a problem unless audio/video sync is off. NA for remote site.	
Print (Independent Study)		


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Small group meeting		View Feedback Ask a Question
T1	This happens frequently in our courses. Requires facilitator to keep students on task. Often done during a teleclass for 10 or 15 minutes. Helpful to develop collaborative skills. Student role assignments are helpful. Teachers should clearly set expectation of accomplishment and task at hand.	
IP Video	This happens frequently in our courses. Requires facilitator to keep students on task. Often done during a teleclass for 10 or 15 minutes. Helpful to develop collaborative skills. Student role assignments are helpful. Teachers should clearly set expectation of accomplishment and task at hand.	
Satellite	This happens frequently in our courses. Requires facilitator to keep students on task. Often done during a teleclass for 10 or 15 minutes. Helpful to develop collaborative skills. Student role assignments are helpful. Teachers should clearly set expectation of accomplishment and task at hand.	
Internet	Internet messaging and threaded discussions are becoming very popular and easy methods of getting students together to collaborate briefly on a topic. Traditional methods of writing/speaking/communication are becoming blurred in this new form of interaction. Young students today are very savvy as to how to communicate using the internet, blogs, IM, etc. Teachers need to feel free to experiment and allow students new avenues of communication.	
Broadcast Television	Would require students to be able to contact each other and then get together.	
Video Home Viewing	Would require students to be able to contact each other and then get together.	
Media Streaming	This happens frequently in our courses. Requires facilitator to keep students on task. Often done during a teleclass for 10 or 15 minutes. Helpful to develop collaborative skills. Student role assignments are helpful. Teachers should clearly set expectation of accomplishment and task at hand.	
Print (Independent Study)		

Small Group Presentation		View FeedbackAsk a Question
T1	This happens frequently. Requires facilitator to be present to adjust camera, switch between students and visual aids used. Students must have facilitator assistance. Student rehearsal has been found to be effective. Careful use of microphones is essential as often students are not familiar with a teacher's lavalier microphone.	
IP Video	This happens frequently. Requires facilitator to be present to adjust camera, switch between students and visual aids used. Students must have facilitator assistance. Student rehearsal has been found to be effective. Careful use of microphones is essential as often students are not familiar with a teacher's lavalier microphone.	
Satellite	Since video feed is not returned on satellite, remote site could not give a presentation unless strictly audio. We have had satellite sites tape their presentations and send them here for us to show student audience. Students must have facilitator assistance. Student rehearsal has been found to be effective. Careful use of microphones is essential as often students are not familiar with a teacher's lavalier microphone.	
Internet	Collaborative activities prepared via the internet (email) have proven very effective, especially when students are geographically separated.	
Broadcast Television	Would require students and instructors to get together outside of school.	
Video Home Viewing	Would require students and instructors to get together outside of school.	
Media Streaming	Since video feed is not returned via streaming, remote site could not give a presentation unless sites tape their presentations and send them here for us to show student audience.	
Print (Independent Study)		